On a Pleurobranchid from the Mediterranean

BY

EVELINE DU BOIS-REYMOND MARCUS

Caixa Postal 6994, 01000 São Paulo, Brasil

(1 Plate; 7 Text figures)

PROFESSOR ALEXANDER BARASH, of Tel Aviv, asked me to classify two specimens of an enigmatic gastropod from the coast of Israel. Because of their uncovered shell, they had been identified provisionally as the prosobranch *Velutina*. However, their anatomy revealed them to be notaspidean opisthobranchs of the family Pleurobranchidae. The only genus in the order Notaspidea with the mantle open, exposing part of the shell, is *Gymnotoplax* Pilsbry (1896: 190, 210).

Gymnotoplax Pilsbry, 1896

Diagnosis: Pleurobranchids, whose shell is only partly covered by the mantle.

Type species: *Pleurobranchus americanus* Verrill, 1885: 429; plt. 44, fig. 13; PILSBRY, 1896: 190, 210; plt. 74, fig. 91; THIELE, 1931: 418; ODHNER, 1968: 851

PILSBRY (1896) states the perforated mantle is diagnostic of the genus, and describes this condition in *Gymnotoplax americanus*, but not in the second species he placed in the genus, *G. martensi* Pilsbry, 1896 (*nom. nov.* for the pre-occupied *Pleurobranchus scutatus* von Martens, 1880).

The generic and specific status of *Gymnotoplax martensi* is questionable. The description and figures in PILSBRY (1896: 211; plt. 48, figs. 34 and 35) are not detailed enough to decide whether *G. martensi* has a mantle aperture. VAYSSIÈRE (1898: 297 - 299) re-examined the three original specimens of Möbius' material and redescribed them. In two the mantle was torn, in one along the left side, in the other (fig. 44) on the right side. This figure is very different from his figure 4 (plt. 18) of "*Bouvieria scutata*" (von Martens, 1880), which corresponds to Pilsbry's figure 35, and is evidently damaged. I think that *G. martensi*, of which only the three specimens of Möbius' 1874 collection are known, must be considered a species *dubia*.

Gymnotoplax has been variously accepted by later authors. PRUVOT-FOL (1954: 218) had supposed that Pilsbry's genus was probably founded on a mutilated specimen, while ABBOTT (1949: 73) had considered it sufficiently distinct to be valid. However, ABBOTT (1974: 347; figs. 4189, 4191) allotted *Berthellina* to *Gymnotoplax* and listed 4 North American species under this name. He did not mention the diagnostic uncovered shell, which does not occur in *Berthellina*. BERTSCH (1975: 105) correctly criticized the generic placement of *B. quadridens* (Mörch, 1863) and *B. engeli* Gardiner, 1936. The two genera are distinct and should not be synonymized.

The genus *Gymnotoplax* can be separated readily from other species of pleurobranchids. MACNAE's key of the Pleurobranchidae (1962: 168) is very similar to that of PILSBRY (1896: 191). Neither Macnae nor BURN (1962: 130 - 131) mention *Gymnotoplax* as they treat only their local fauna. In Burn's key the present animals fit into the Pleurobranchinae with a tuberculate gill rhachis and a pedal gland. Burn's first alternative with a small shell, *Pleurobranchus*, can be excluded. His third alternative, *Susania*, has a very small, if any, shell. The second, *Oscanius*, is similar in having a large shell, single denticle on the inner radular teeth, and a separation of the genital apertures by fleshy folds; however, the mantle not larger than the foot is incompatible with *Gymnotoplax*. Most importantly, the wide mantle aperture over the shell occurs only in Pilsbry's genus, *Gymnotoplax*.

Gymnotoplax barashi Eveline Marcus, spec. nov.

Diagnosis: Pleurobranchidae, Pleurobranchinae with wide aperture of the mantle over the shell. The shell is almost as big as the notum.

Material: Mediterranean, Haifa Bay, 46m, mud, sand. 11 June 1975; M. Tom, leg.; no. TAU 83 B3: 2 specimens.

Description: The largest animal is preserved 14mm long, 15mm wide, and 9mm high, the second (Figures 1, 2) measures 11mm long, 12mm broad, and 6mm high. The notum stands out all over the head and foot, it is hardly notched over the rhinophores; its free outer border is about 4mm wide. It is beset with flat knobs. There is a wide aperture, 10mm long and 8mm broad, over the shell in the large snail, 8mm long and 7mm broad in the small one (Figure 1). The foot, notched in front, is 12 mm long and 9mm broad in the big animal. The pedal gland at its hind end (Figure 2) is 2.0 × 2.0mm in the big, 3.5 × 1.5mm in the small snail.

The shell (Figure 3), 14mm long, 11mm broad in the largest animal, has a thin, shattered calcareous layer with distinct growth lines and a colourless periostracum. The protoconch is slightly bent downward. There are no spicules preserved.

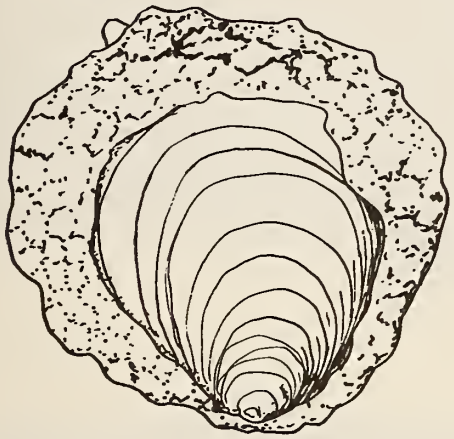

Figure 1

Gymnotoplax barashi Eveline Marcus, spec. nov.
Dorsal view of preserved 11mm specimen

Figure 2

Gymnotoplax barashi Eveline Marcus, spec. nov.
Ventral view of preserved 11mm specimen

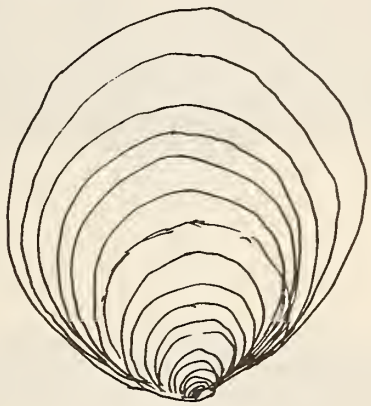

Figure 3

Gymnotoplax barashi Eveline Marcus, spec. nov.
Shell of 14mm specimen

The notum is whitish and has a network of brown pigment around the knobs and on its border (Figure 1). The hyponotum is transparent, the foot, light brown. The rolled brown rhinophores (Figure 4) lie close together,

Figure 4

Gymnotoplax barashi Eveline Marcus, spec. nov.
Frontal view of head

the furrow on their outer side and the inner side of the strong, grooved tentacular flaps are white; the veil between them is light brown.

The gill has about 22 pinnules on either side. On the rhachis between them stand alternating knobs. The branchial membrane fastens about half the pinnules. The anal opening lies just in front of it.

have a basal denticle on the outer side. The teeth increase in length outwards.

As I did not want to damage the second specimen, I did not succeed in dissecting the details of the inner reproductive organs.

This species is named in honor of our old friend, Professor Alexander Barash, Tel Aviv, to whom I extend my sincere thanks for the very interesting specimens.

Figure 5

Gymnotoplax barashi Eveline Marcus, spec. nov.
Outer part of reproductive organs

The outer genital organs (Figure 5) are extruded in both specimens. The long, slender, extruded penis is surrounded by an everted atrium which is continued into 3 lappets. These connect the male and female apertures.

The pharynx is small. The jaw plates are delicate and composed of platelets with 1 to 4 points (Figure 6). The radula (Figure 7) measures 2.2 × 1.6mm. It has about 40 rows with 100 teeth per half-row. The innermost teeth

Discussion: The present species differs from the geographically nearest one, *Gymnotoplax martensi*, from Fouquets, Mauritius, by a straight anterior border of the notum, against a notched one in *G. martensi*, and it has a proportionally much bigger shell. In *G. martensi*, preserved 10mm long, the shell measures 6 × 2.5mm. As far as I could find, *G. martensi* is known only from the first description, copied in Pilsbry (1896: 211).

Explanation of Figures *8* to *11*

Gymnotoplax barashi Eveline Marcus, spec. nov.

Figure *8*: Dorsal view of paratype
Figure *9*: Ventral view of paratype
Figure *10*: Dorsal view of holotype
Figure *11*: Ventral view of holotype

Professor Alexander Barash, Tel-Aviv, photographed the preserved specimens

Figure 8

Figure 9

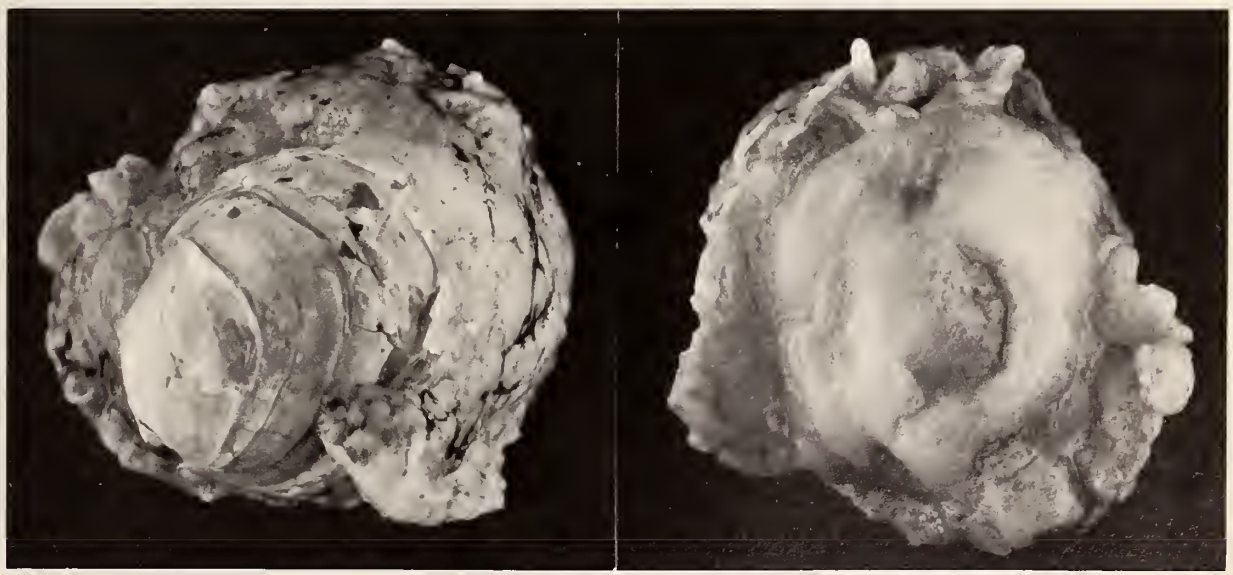

Figure 10

Figure 11